

Introduction of a new risk-based capital framework in Singapore – Convergence or divergence in relation to Solvency II?

Solvency Consulting Knowledge Series

Author

Dr. Manijeh McHugh

Contact

solvency-solutions@munichre.com

December 2013

In June 2012, the Monetary Authority of Singapore (MAS) published a review on the risk-based capital framework for insurers in Singapore (RBC 2 Review). The revision of the current framework is mainly motivated by the need to adapt to evolving market practices and global change in regulatory requirements. The Insurance Core Principles (ICPs)¹ pave the way for these developments.

This paper aims to introduce the proposals² suggested by MAS and, whenever reasonable, compare these with the current status of Solvency II.³ Solvency II is a fundamental review of risk management requirements for the insurance industry in the European Economic Area (EEA), currently expected to be implemented by 2016. Please note that in contrast to Solvency II, RBC 2 does not constitute an entirely new framework. It is rather built on the foundations of the existing risk-based capital regime.

1 Determination of required capital

In order to determine regulatory capital requirements, many jurisdictions allow for a variety of methods, ranging from simple volume-based methods to internal models. The proposals presented in this section mainly relate to the calculation of total risk requirements (TRR) as prescribed by the standardised approach. Within the standardised approach, TRR comprises three risk categories: a) insurance risk (C1), b) market risk (C2) and c) concentration risk (C3) (see figure 1). The capital requirements for each of these risk categories are currently determined by applying a factor-based approach.

¹ International Association of Insurance Supervisors, Insurance Core Principles, Standards, Guidance and Assessment Methodology; October 2012.
² Each section includes a reference to the respective proposal number as used by MAS.
³ The information provided here is based on the "Review on Risk-Based Capital Framework for Insurers (RBC 2 Review)", MAS Consultation Paper P011-2012 dated June 2012 and the "Technical Specification on the Long Term Guarantee Assessment (LTGA)" dated January 2013 in conjunction with Directive 2009/138/EC, representing the current status of RBC 2 and Solvency II respectively.

Figure 1: Composition of total risk requirement (TRR)



a) Target criteria for calibration of risk requirement

In its current state, the calibration of TRR does not take into account any confidence level or time horizon. Following the approach of other jurisdictions (e.g. Solvency II), MAS aims to recalibrate risk requirements by applying a Value at Risk (VaR) 99.5% over a one-year time horizon. Further, MAS proposes a new approach for the determination of risk requirements, away from the factor-based approach that is currently in place to a scenario-based approach. That is, similar to Solvency II, risk requirements under RBC 2 are to be derived by measuring the impact of various shocks on a company’s net asset value, each calibrated at a VaR 99.5% (Proposal 5).

b) Diversification benefits

Under the current solvency regime, capital requirements resulting from the risk categories C1, C2 and C3 are added together to derive the TRR without taking into account diversification benefits between or within risk categories. MAS is, however, willing to consider diversification benefits once the industry provides correlations which are applicable under both normal and stressed conditions. As there is no conclusive study showing the dependencies between different risks, for the time being MAS does not account for diversification benefits. (Proposal 6).

This decision is widely criticised by the industry and the Singapore Actuarial Society (SAS)⁴, not only because it deviates from the approach of other jurisdictions (e.g. Solvency II) but also because it stands in clear contradiction to a VaR 99.5% and the risk tolerance inherent in it. The simple aggregation of capital charges implies a perfect correlation of all risks and therefore overstates the TRR.

c) New risk modules

The RBC 2 framework discusses the inclusion of four new risk categories – spread risk, operational risk, insurance catastrophe risk and liquidity risk. As things stand at present, MAS proposes to incorporate charges for the first three categories, which are considered under Solvency II as well. According to MAS, a profound quantification of the latter – liquidity risk – is not provided. Therefore, MAS intends to work with the industry on adequate stress tests. In the meantime MAS will assess the appropriateness of insurers’ liquidity risk management within its risk-based supervision (Proposal 2).

Spread risk

Within the meaning of Art. 13 of Directive 2009/138/EC (Solvency II Directive), spread risk is the sensitivity of assets, liabilities and financial instruments to changes in the level or volatility of credit spreads over the risk-free interest-rate term structure. As MAS has not yet provided any information on the calibration of spread risk, comparison with the European approach is not possible at present. (Proposal 1)

⁴ Consultation Response of SAS dated 29 August 2012.

Operational risk

According to Art. 13 of the Solvency II Directive operational risk is the loss arising from inadequate or failed internal processes, personnel or systems, or from external events. The quantification of operational risk is a challenge for RBC 2 but also for regulatory systems in other jurisdictions. Nonetheless, MAS aims to start with a pragmatic solution and improve the method based on the feedback expected from the industry.

The capital requirement for operational risk is quantified as 4% (0.25% for unit-linked business) of the higher of the past three years' averages of a) earned premium income and b) gross policy liabilities. However, this value is restricted to a maximum of 10% of an insurer's TRR. (Proposal 3)

The criticism regarding the proposed formula is twofold:

First, as the quantification of the operational risk charge is volume-based, an increase of premiums due to a price increase will lead to a higher capital requirement. The existence and extent of risk controls, however, is not taken into account. Second, the formula does not distinguish between different lines of business. SAS argues that differences in product design could lead to differences in operational risk.⁵

A comparison with Solvency II reveals that at least the first part of the criticism applies to the European regulatory system as well. Similar to RBC 2, the capital charge for operational risk under Solvency II is the higher of a) premium-based and b) provision-based requirements. However, there are two major differences to RBC 2. First, while premium-based requirements within RBC 2

are solely dependent on premiums, the European regime also accounts for growth figures above a threshold level of 20%. Second, unlike RBC 2, the provision-based component distinguishes between two lines of business by applying a risk charge on non-life provisions that is almost seven times the charge on life business. As such, the second part of the above-mentioned criticism is not valid for Solvency II.

Catastrophe risk

In line with the approach of internal models, MAS would like insurers to capture catastrophe risk by constructing a catastrophe scenario most relevant to their business. Given the complexity of this task, for the time being MAS intends to prescribe a number of man-made and natural catastrophe scenarios in order to derive the subsequent risk charge for non-life business. For life business MAS proposes the use of a pandemic event. (Proposal 4)

At first glance, it seems that MAS is following an approach comparable to that of Solvency II. The non-life catastrophe risk module under Solvency II does incorporate some distinct features, though, e.g. geographical diversification for non-life cat risk, which at the current stage are not likely to be accounted for within RBC 2.

d) Internal models

Following the global trend towards a more realistic representation of insurers' individual risk profiles, MAS intends to allow for the use of (partial) internal models as an alternative to the standardised approach in a later stage of the RBC 2 introduction. These will be subject to approval by MAS (Proposal 7). Apart from the industries' urge to make (partial) internal models eligible from the first day of the application of RBC 2, information on the approval process as well as the treatment of internal models already developed by parent companies in other jurisdictions still need to be provided.

2 Determination of available capital

In order to meet the TRR, insurers are required to hold financial resources. Under the RBC framework, financial resources comprise three categories of capital: a) tier 1 capital, i.e. capital of the highest quality; b) tier 2 capital, i.e. capital of lower quality than tier 1 and only applicable to locally incorporated insurers; and c) aggregate of allowances for provisions for non-guaranteed benefits (APNGB), which is only available to absorb losses of participating funds.

Unlike the European Insurance and Occupational Pensions Authority (EIOPA), MAS is the supervisory authority for both the banking and the insurance industry. As such, MAS aims to achieve a level playing field within the insurance industry and between the insurance and banking industry.

⁵ Consultation Response of SAS dated 29 August 2012.

In order to align the two regulatory frameworks, MAS proposes to incorporate the Basel III requirements for approved tier 1 capital. (Proposal 8)

Apart from alignment with Basel III, the determination of available capital will be affected by the change in the treatment of negative reserves and allowances for provision for non-guaranteed benefits.

a) Negative reserves

The treatment of negative reserves, in Europe also known as “expected profits included in future premiums” (EPIFP) largely varies between different jurisdictions. While the current RBC regime does not recognise negative reserves at all, Canadian authorities, for instance, accept a part of negative reserves as tier 2 capital and the new European regime even as tier 1 capital, but probably subject to enhanced governance requirements. MAS intends to allow for a partial recognition of negative reserves. Unlike Solvency II, however, the recognition is restricted to a) a certain amount which still needs to be determined by MAS and b) a positive financial resource adjustment, i.e. an off-balance sheet treatment. (Proposal 9)

Although the recognition of negative reserves will lead to an increase of TRR coverage, ceteris paribus, the suggested treatment of negative reserves by MAS raises some questions. First, why a limitation of accepted negative reserves is necessary and how the level of recognised negative reserves will be determined, other than by using a discretionary approach. Second, MAS did not provide information on its decision to treat negative reserves as positive resource adjustment. By choosing this approach, MAS avoids immediate tax-related considerations which would arise with an on-balance sheet treatment that recognises negative reserves as tier 1 or tier 2 capital (i.e. tax liabilities deriving from an immediate “gain” through the revaluation of reserves). On the other hand, a full balance sheet treatment would contribute to a market-consistent treatment of liabilities.⁶ Third, in order to allow for correct valuation, MAS needs to provide information on the application of contract boundaries.

b) Aggregate of allowances for provision of non-guaranteed benefits

As mentioned above, the current RBC regime allows APNGB to be classified as capital items given that a) the insurer maintains a participating fund and b) the adjusted capital ratio exceeds the unadjusted capital ratio. The adjusted (unadjusted) capital ratio is defined as the ratio of financial resources excluding (including) financial resources of any participating fund to the TRR excluding (including) requirements arising from any participating fund.

Referring to the International Association of Insurance Supervisors’ (IAIS) requirements concerning capital adequacy⁷, MAS argues that APNGB does not meet the criteria of a capital item. Therefore, MAS proposes to reclassify APNGB as positive financial resource adjustment which does not appear in the balance sheet. The auxiliary condition, i.e. adjusted capital ratio is required to exceed the unadjusted capital ratio, remains valid. (Proposal 10)

SAS argues that according to the Insurance (Valuation and Capital) Regulations 2004, any financial resource adjustment will be treated as tier 1 capital. Thus, a reclassification of APNGB as financial resource adjustment means that APNGB will be treated as tier 1 capital. This however, undermines MAS’ intentions not to allow APNGB to be classified as tier 1 capital. How this tension will be resolved remains to be seen.

⁶ For more information, please refer to Consultation Response of SAS dated 29 August 2012, p. 13.

⁷ IAIS; Insurance Core Principles, Standards, Guidance and Assessment Methodology, 12 October 2012, ICP 17.

3 Solvency intervention levels

Under the current RBC regime, insurers are required to ensure TRR coverage by holding a minimum capital adequacy ratio (CAR) of 100%. However, they are obliged to notify MAS as soon as their CAR falls below the threshold level of 120%. Following international developments on capital adequacy⁸, MAS intends to introduce two intervention levels, i.e. the prescribed capital requirement (PCR) and the minimum capital requirement (MCR). Please note that in contrast to Solvency II, both requirements have to be met at company and on fund level.

a) Prescribed capital requirement

The prescribed capital requirement constitutes the higher supervisory intervention level. Financial resources are required to meet at least the TRR corresponding to a VaR 99.5% over a one-year period.

In case of violation of the above-mentioned requirement, insurers are obliged to submit a recovery plan and ensure the restoration of the capital position within three months. MAS reserves the right to maintain financial resources above the PCR in case of supervisory concerns. Further, in order to leave room for countercyclical measures, MAS may allow for a longer recovery period in times of stress. (Proposal 11)

b) Minimum capital requirement

The minimum capital requirement, i.e. the lower supervisory intervention level, will be calibrated against the background of a VaR 90% and expressed as fixed percentage of PCR. In case of violation, MAS may apply the strongest supervisory action (e.g. prohibition of new business). (Proposal 12)

Comparing the intervention levels of RBC 2 with those of Solvency II reveals two major differences. First, in line with the present RBC regime, RBC 2 requires a coverage of supervisory targets on company and fund level. Since a coverage on fund level is not required under Solvency II, insurers operating in Singapore may have a disadvantage by being limited in their flexibility in comparison to companies operating under Solvency II – to the extent that the companies compete with each other and the regulations governing ring-fenced funds are not applicable under Solvency II. Second, the proposed recovery periods seem to be very

ambitious. Please note that in case of violation of the higher intervention level, European insurers are given a period of two months for the submission of a recovery plan as well as a period of six months, with a possible extension of three months, for recovery. Further, additional extensions in times of financial stress are currently being discussed. In case of violation of the lower intervention level, the periods for submission of a recovery plan and recovery are reduced to one month and three months respectively. The possible extension period of three months remains valid.

As in Singapore, the introduction of adequate countercyclical measures has been widely discussed in Europe. In fact, it is one of the main reasons for the delay of Solvency II. In order to get a better understanding of the impact of different methods on companies' long-term obligations, especially in life insurance, EIOPA has performed a quantitative impact study on long-term guarantees. For more information on the measures and on the results of the study reference is made to the publication "EIOPA publishes the findings of the quantitative impact study on long-term guarantees – Solvency II on the home straight?".⁹

⁸ IAIS; Insurance Core Principles, Standards, Guidance and Assessment Methodology, 12 October 2012, ICP 17.4.

⁹ http://www.munichre.com/publications/302-07983_en.pdf

4 Valuation of assets and liabilities

Following the current RBC approach, the determination of the risk-free discount rate within RBC 2 remains dependent on the currency of the underlying liabilities.

For Singapore-dollar-denominated liabilities, MAS proposes two different approaches and requests industry feedback on the appropriateness of the two methods. (Proposal 13)

The first method is in place under the current regime. However, due to improved availability of financial instruments, the respective durations have been enlarged. Thus, the risk-free discount rate is equal to

- the prevailing market yield of Singapore Government Securities (SGS) for durations up to 20 years,
- 90% of historical average yields since inception and 10% of latest six-month average yield of 30 year SGS for durations beyond 30 years and
- the interpolated yields for durations between 20 and 30 years.

The second approach suggests risk-free discount rates equal to

- the prevailing market yields of SGS for durations up to 30 years and
- a flat extrapolation from year 30 onwards.

For liabilities not denominated in Singapore dollars, MAS proposes to apply the regulatory requirements for discounting as defined by the jurisdiction issuing the currency. (Proposal 14)

MAS also suggests extending the discount rate requirements which are currently only applicable to life business to general business for liability durations above one year. Liability durations below one year should not be discounted. (Proposal 15)

The determination of risk-free discount rates is being heavily discussed within the European solvency regime. The above-described approach of risk-free discount rates deviates significantly from the current approach under Solvency II. First, the methods used within Solvency II apply to each currency. However, for equivalent jurisdictions, local valuation rules may be applied for group solvency if the deduction and aggregation method is used. Second, as the market for SGS in Singapore is more liquid than the swap market, MAS does not use swap rates as under Solvency II. Third, Solvency II requires a discounting of all liabilities irrespective of the underlying duration, with interest rate adjustments in certain cases being possible. The above-mentioned quantitative impact study on long-term guarantees also broached the issue of extrapolation. To be more precise, the study examined the impact of different convergence periods and different starting points for extrapolation. For more information, please see the above-mentioned Munich Re publication.

5 Enterprise risk management (ERM)

MAS intends to strengthen ERM by introducing new requirements such as the Own Risk and Solvency Assessment (ORSA). (Proposal 16) Therefore, in January 2013 MAS published a consultation paper on ERM.¹⁰

The supplementation of the mostly quantitative approach by qualitative elements (e.g. ORSA) can be observed in many jurisdictions and is supported by the industry.

6 Proposed timeline

In the original consultation paper, MAS aimed to implement the RBC 2 requirements for the accounting year ending 31 December 2013 with a parallel run with the existing framework for at least two years. In the meantime, however, MAS has announced that the timeline will be revised. The new timeline has not been published yet.

The efforts made by MAS to revise the current risk-based capital framework are largely supported by the industry as well as SAS. Although there is general agreement with most of the proposals, there are also concerns about the burden that RBC 2 might place on the industry, both in terms of additional capital requirement and extra resources necessary in order to comply.

¹⁰ "Enterprise Risk Management for Insurers", MAS Consultation Paper P002-2013 dated January 2013.

At the current stage, two proposals are at the centre of attention. First, the disallowance of diversification benefits, which contradicts the risk tolerance inherent a VaR 99.5%, and second, the appropriate calibration of operational risk, a challenge not only for RBC 2 but also for frameworks in other jurisdictions.

The further steps of the RBC 2 review process will clarify the impact of the new framework on the insurance industry and the degree of alignment with the solvency regimes of other jurisdictions. From today's perspective, however, tendencies towards a convergence between RBC 2 and Solvency II are clearly observable.

Solvency Consulting for your company

Munich Re assists its clients in all areas of Enterprise Risk Management (ERM). Solvency Consulting has a wealth of experience in dealing with the standard formula, the development and use of internal stochastic risk models and their relevance to value-based portfolio management. We also play an active role in industry committees looking at regulation and specialist issues and ensure that knowledge and expertise are transferred and translated into practical recommendations for action on the ground. We are thus able to offer our clients real and efficient help in preparing for ERM topics.

